

A Comet Surface Sample Return System, Phase I

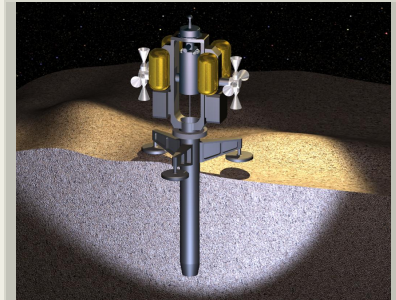
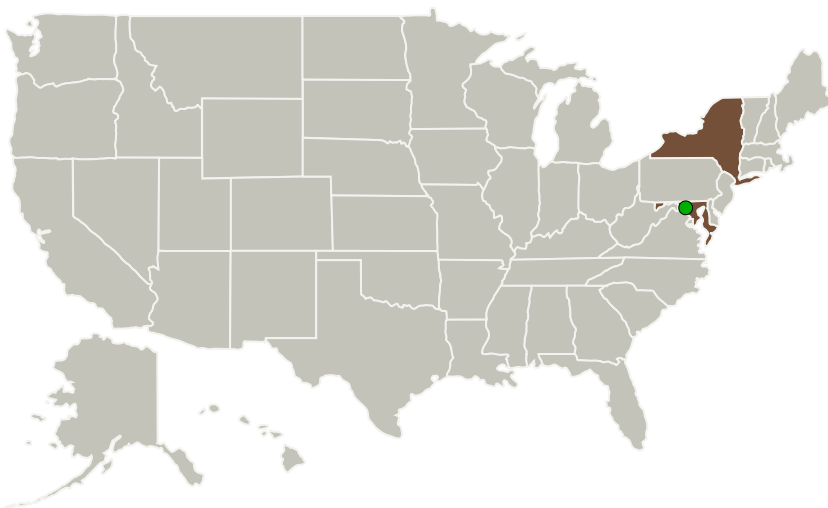
Completed Technology Project (2013 - 2013)



Project Introduction

The proposed Phase I investigation will focus on the development of spacecraft systems required to obtain a sample from the nucleus of a comet, hermetically seal the sample within a capsule, and return the sealed sample to an orbiting spacecraft which can return the sample to Earth. A preliminary systems level concept has been developed. This concept will be refined during the proposed Phase I investigation, including proof-of-concept breadboards and analyses of critical subsystems.

Primary U.S. Work Locations and Key Partners



A Comet Surface Sample Return System

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| Organizations Performing Work | Role | Type | Location |
|---|-------------------------|-------------|----------------------|
| Honeybee Robotics, Ltd. | Lead Organization | Industry | Pasadena, California |
|  Goddard Space Flight Center(GSFC) | Supporting Organization | NASA Center | Greenbelt, Maryland |

Primary U.S. Work Locations


| | |
|----------|----------|
| Maryland | New York |
|----------|----------|

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Project Transitions

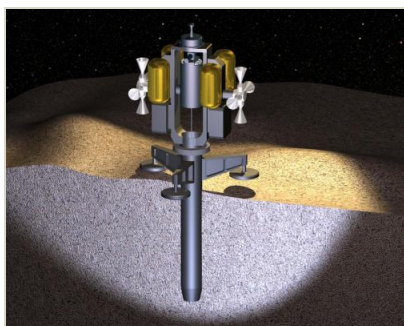
 **May 2013:** Project Start

 **November 2013:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/140439>)

Images



Project Image

A Comet Surface Sample Return System

(<https://techport.nasa.gov/image/125910>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Honeybee Robotics, Ltd.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Philip C Chu

Co-Investigator:

Philip G Chu

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Technology Maturity (TRL)

Start: **3**
Current: **4**
Estimated End: **4**



Technology Areas

Primary:

- TX04 Robotic Systems
 - └ TX04.3 Manipulation
 - └ TX04.3.2 Grappling Technologies

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System